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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,893	09/29/2006	Daniel Kopf	120391	8707

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OLIFF & BERRIDGE, PLC
P.O. BOX 320850
ALEXANDRIA, VA 22320-4850

EXAMINER	
HAGAN, SEAN P	

ART UNIT	PAPER NUMBER
2828	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,893	KOPF ET AL.	
	Examiner	Art Unit	
	SEAN HAGAN	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1 through 12 originally filed 6 June 2006. Claims 1 through 11 presented as amended sheet of claims 6 June 2006. Claims 5, 6, 7, 9, 10, and 11 amended by second amendment filed 6 June 2006. Claims 1 through 10 amended by amendment filed 5 July 2006. Claim 11 cancelled by amendment filed 5 July 2006. Claims 12 through 19 added by amendment filed 5 July 2006. Claims 1 through 10 and 12 through 19 are pending in this application.

Response to Arguments

2. Applicant's arguments have been fully considered but they are not persuasive.

3. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., saturable absorber mirror) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

4. Regarding argument that present cited art fails to disclose the claimed "at least one pulse decoupling component" as recited in claim 1, there is no further limitation as to what actually constitutes this decoupling component within this claim and it has been determined that any component for directing any laser pulse out of any system for

generating laser pulses would read on this particular limitation. As the presently cited art is possessed of a means to direct pulses out of the pulse generation portion, it is determined that it meets this limitation.

5. In response to applicant's arguments, the recitation high repetition mode-coupled ultra-short laser system for generating femto- or picosecond pulses has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

6. Accordingly, all claims are addressed as previously stated and restated as follows:

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 2, and 12 rejected under 35 U.S.C. 102(b) as being anticipated by Dahm (US Patent 5,848,080).

9. ***Regarding claim 1,*** Dahm discloses, "An amplifying laser medium" (col. 4, lines 6-9). "A laser resonator with at least one resonator mirror" (col. 4, lines 6-9). "At least one pulse decoupling component" (col. 4, lines 28-45). "A pump source for pumping the laser medium" (col. 4, lines 46-51). "Wherein the pulse decoupling component is an electro-optical modulator" (col. 4, lines 28-45).

10. ***Regarding claim 2,*** Dahm discloses, "Wherein the electro-optical modulator is a BBO cell" (col. 4, lines 28-45).

11. ***Regarding claim 12,*** Dahm discloses, "Wherein the pump source is a laser diode source" (col. 4, lines 46-51).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 7, 8, 10, 17, and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Dahm.

14. ***Regarding claim 7,*** Dahm discloses, "Wherein the laser medium is ytterbium-doped glass or Nd:YVO4 " (col. 4, lines 6-9).

15. ***Regarding claim 8,*** Dahm does not disclose, "Wherein the laser medium comprises ytterbium-doped tungstates." It would have been an obvious matter of design choice to use KGW or KYW as host material, since applicant has not disclosed that this difference solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the difference.

16. ***Regarding claim 10,*** Dahm discloses, "The pump light spot consisting of a single ray or the combination of a plurality of rays" (col. 4, lines 46-51). Dahm does not disclose, "Wherein the pump source is formed and is arranged in such a way that a pump light spot having a ratio of length to width of at least 2:1 is formed." It would have been an obvious matter of design choice to design the pump medium to have a ratio of length to width of 2:1, since applicant has not disclosed that this difference solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the difference.

17. ***Regarding claim 17,*** Dahm does not disclose, "Wherein the laser medium comprises Yb:KGW or Yb:KYW." It would have been an obvious matter of design choice to use KGW or KYW as host material, since applicant has not disclosed that this

difference solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the difference.

18. ***Regarding claim 18,*** Dahm discloses, "Wherein pump light consists of the combination of a plurality of rays" (col. 4, lines 46-51). "The rays being generated by laser diodes" (col. 4, lines 46-51).

19. Claims 3 and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Dahm in view of Dell'Acqua et al. (Dell'Acqua, US Pub. 2005/0152426).

20. ***Regarding claim 3,*** Dahm does not disclose, "Wherein the electro-optical modulator is an RTP cell." Dell'Acqua discloses, "Wherein the electro-optical modulator is an RTP cell" (p. [0091], lines 1-5). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Dahm with the teachings of Dell'Acqua. The use of RTP electro optical modulator as Q-switch as disclosed by Dell'Acqua would have been suitable for use with the teachings of Dahm. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

21. ***Regarding claim 13,*** Dahm does not disclose, "Wherein the RTP cell comprises a component for compensating thermal drift." Dell'Acqua discloses, "Wherein the RTP

cell comprises a component for compensating thermal drift" (p. [0092], lines 1-5). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Dahm with the teachings of Dell'Acqua for the reasons disclosed above regarding claim 3.

22. Claims 4 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Dahm in view of Duguay et al. (Duguay, US Patent 3,675,154).

23. ***Regarding claim 4,*** Dahm does not disclose, "At least one dispersive mirror for dispersion compensation." Duguay discloses, "At least one dispersive mirror for dispersion compensation" (col. 1, lines 46-54). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Dahm with the teachings of Duguay. The inclusion of dispersion compensation as disclosed by Duguay would enhance the teachings of Dahm by allowing reduction of pulse width of optical pulses (Duguay, col. 1, lines 38-42).

24. ***Regarding claim 14,*** Dahm does not disclose, "Wherein the at least one dispersive mirror for dispersion compensation is a Gires-Tournois interferometer." Duguay discloses, "Wherein the at least one dispersive mirror for dispersion compensation is a Gires-Tournois interferometer" (col. 1, lines 46-54). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the

teachings of Dahm with the teachings of Duguay for the reasons given above regarding claim 4.

25. Claims 6, 16, and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Dahm in view of applicant's admitted prior art.

26. ***Regarding claim 6,*** Dahm does not disclose, "Wherein the laser system is formed so that, in the generation of femtosecond pulses, the r parameter is less than 1." Applicant's admitted prior art discloses, "Wherein the laser system is formed so that, in the generation of femtosecond pulses, the r parameter is less than 1" (pg. 7, lines 6-18). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Dahm with the teachings of applicant's admitted prior art. Operating conditions presented for operation in applicant's admitted prior art would enhance the teachings of Dahm by improving stability conditions.

27. ***Regarding claim 16,*** Dahm does not disclose, "Wherein the r parameter is less than 0·25." Applicants admitted prior art discloses, "Wherein the r parameter is less than 0·25" (pg. 12, lines 12-25). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Dahm with the teachings of applicant's admitted prior art. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Dahm with the teachings of applicant's admitted prior art. Operating conditions presented for operation in

applicant's admitted prior art would enhance the teachings of Dahm by improving stability conditions.

28. ***Regarding claim 19,*** Dahm does not disclose, "Providing a material to be processed by plasma generation." Applicant's admitted prior art discloses, "Providing a material to be processed by plasma generation" (pg. 1, lines 11-20). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Dahm with the teachings of applicant's admitted prior art. Intended use for high-speed laser devices as disclosed by applicants admitted prior art would have been a suitable application for a device according to the teachings of Dahm. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

29. Claim 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Dahm in view of Powell et al. (Powell, US Patent 4,849,036).

30. ***Regarding claim 9,*** Dahm does not disclose, "Wherein the laser medium has a disc-like geometry." Powell discloses, "Wherein the laser medium has a disc-like geometry" (col. 1, lines 23-44). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Dahm with the teachings of Powell. Laser disk geometry as taught by Powell would have been suitable to use with

the teachings of Dahm. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

31. Claims 5 and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Dahm in view of Duguay and further in view of applicants admitted prior art.

32. ***Regarding claim 5,*** Dahm does not disclose, "Wherein the laser system is formed so that, in the generation of picosecond pulses, the nonlinear phase is less than 100 mrad." "The nonlinear phase being calculated per resonator cycle and per 1% modulation depth of the saturable absorber mirror." Applicant's admitted prior art discloses, "Wherein the laser system is formed so that, in the generation of picosecond pulses, the nonlinear phase is less than 100 mrad" (pg. 12, lines 12-25). "The nonlinear phase being calculated per resonator cycle and per 1% modulation depth of the saturable absorber mirror" (pg. 12, lines 12-25). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Dahm with the teachings of applicant's admitted prior art. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Dahm with the teachings of applicant's admitted prior art. Operating conditions presented for operation in applicant's admitted prior art would enhance the teachings of Dahm by improving stability conditions.

33. ***Regarding claim 15,*** Dahm does not disclose, "Wherein the nonlinear phase is less than 10 mrad." Applicant's admitted prior art discloses, "Wherein the nonlinear phase is less than 10 mrad" (pg. 12, lines 12-25). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Dahm with the teachings of applicant's admitted prior art. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Dahm with the teachings of applicant's admitted prior art. Operating conditions presented for operation in applicant's admitted prior art would enhance the teachings of Dahm by improving stability conditions.

Conclusion

34. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

35. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEAN HAGAN whose telephone number is (571)270-1242. The examiner can normally be reached on Monday-Friday 7:30 - 5:00.

37. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun O. Harvey can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

38. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. H./
Examiner, Art Unit 2828

/Minsun Harvey/
Supervisory Patent Examiner, Art Unit 2828